

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (CURRENTLY AMENDED) Seed of A seed of soybean line soybean cultivar designated 0509237, wherein a representative sample of seed of said line having been said cultivar was deposited under ATCC Accession No. PTA-.
2. (ORIGINAL) A soybean plant, or a part thereof, produced by growing the seed of claim 1.
3. (ORIGINAL) A tissue culture of regenerable cells produced from the plant of claim 2.
4. (CURRENTLY AMENDED) Protoplasts A protoplast produced from the tissue culture of claim 3.
5. (CURRENTLY AMENDED) The tissue culture of culture according to claim 3, wherein cells of the tissue culture said regenerable cells are from a tissue plant part selected from the group consisting of leaf, pollen, embryo, root, root tip, anther, pistil, flower, seed, pod, and stem leaves, pollen, embryos, roots, root tips, anthers, pistils, flowers, seeds, pods, and stems.
6. (CURRENTLY AMENDED) A soybean plant regenerated from the tissue culture of claim 3, said plant having all wherein the plant has all of the morphological and physiological characteristics of line of cultivar 0509237, representative a representative sample of seed of said line said cultivar having been deposited under ATCC Accession No. PTA-.
7. (ORIGINAL) A method for producing an F1 hybrid soybean seed, comprising crossing the plant of claim 2 with a different soybean plant and harvesting the resultant F1 hybrid soybean seed.
8. – 9. (CANCELED)
10. (ORIGINAL) A method for producing a male sterile soybean plant comprising transforming the soybean plant of claim 2 with a nucleic acid molecule that confers male

sterility.

11. (ORIGINAL) A male sterile soybean plant produced by the method of claim 10.

12. (ORIGINAL) A method of producing an herbicide resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers herbicide resistance.

13. (ORIGINAL) An herbicide resistant soybean plant produced by the method of claim 12.

14. (CURRENTLY AMENDED) The soybean plant of claim 13, wherein the transgene confers resistance to an herbicide selected from the group ~~consisting of:~~ consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

15. (ORIGINAL) A method of producing an insect resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers insect resistance.

16. (ORIGINAL) An insect resistant soybean plant produced by the method of claim 15.

17. (ORIGINAL) The soybean plant of claim 16, wherein the transgene encodes a *Bacillus thuringiensis* endotoxin.

18. (ORIGINAL) A method of producing a disease resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers disease resistance.

19. (ORIGINAL) A disease resistant soybean plant produced by the method of claim 18.

20. (CURRENTLY AMENDED) A method of producing a soybean plant with modified fatty acid metabolism or modified carbohydrate metabolism comprising transforming the soybean plant of claim 2 with a transgene encoding a protein selected from the group consisting of stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme wherein the

transgene is expressed.

21. (CURRENTLY AMENDED) A soybean plant having modified fatty acid metabolism or modified carbohydrate metabolism produced by the method of claim 20.

22. (CURRENTLY AMENDED) A soybean plant, ~~or part or a part~~ thereof, having all the all of the physiological and morphological characteristics of the line soybean cultivar 0509237, representative sample of seed of said line said cultivar having been deposited under ATCC Accession No. PTA-_____.

23. (CURRENTLY AMENDED) A method of introducing a desired trait into soybean line soybean cultivar 0509237 comprising:

- (a) crossing 0509237 plants grown from 0509237 seed, representative a representative sample of seed of which has been deposited under ATCC Accession No. PTA-_____, with plants of another soybean line that cultivar that comprise and express a desired trait to produce F1 progeny progeny plants, wherein the desired trait is selected from the group consisting of male sterility, herbicide resistance, insect resistance, and disease resistance;
- (b) selecting F1 progeny one or more progeny plants that have and express the desired trait to produce selected F1 progeny progeny plants;
- (c) crossing the selected progeny plants with the 0509237 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have and express the desired trait and all of the physiological and morphological characteristics of soybean line soybean cultivar 0509237 listed in Table 1 to produce selected backcross progeny plants; and
- (e) repeating steps (c) and (d) one or three or more times in succession to produce selected second fourth or higher backcross progeny plants that comprise and express the desired trait and all of the physiological and morphological characteristics of soybean line soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in

the same environmental conditions.

24. (CURRENTLY AMENDED) A plant produced by the method of claim 23, wherein the plant has and expresses the desired trait and all of the physiological and morphological characteristics of ~~soybean line~~ soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

25. (CURRENTLY AMENDED) The plant of claim 24 wherein the desired trait is herbicide resistance and the resistance is conferred to an herbicide selected from the group ~~consisting of:~~ consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinotricin, triazine and benzonitrile.

26. (ORIGINAL) The plant of claim 24 wherein the desired trait is insect resistance and the insect resistance is conferred by a transgene encoding a *Bacillus thuringiensis* endotoxin.

27. (ORIGINAL) The plant of claim 24 wherein the desired trait is male sterility and the trait is conferred by a cytoplasmic nucleic acid molecule that confers male sterility.

28. (CURRENTLY AMENDED) A method of modifying fatty acid metabolism or ~~modified~~ modifying carbohydrate metabolism ~~into~~ of soybean line of soybean cultivar 0509237 comprising:

- (a) crossing 0509237 plants grown from 0509237 seed, representative a representative sample of seed of which has been deposited under ATCC Accession No. PTA-_____, with plants of another ~~soybean line~~ soybean cultivar that comprise and express a nucleic acid molecule encoding an enzyme selected from the group consisting of phytase, stearyl-ACP desaturase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme;
- (b) selecting ~~F1 progeny~~ one or more progeny plants that have and express said nucleic acid molecule to produce selected ~~F1 progeny~~ progeny plants;

- (c) crossing the selected progeny plants with the 0509237 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have and express said nucleic acid molecule and all of the physiological and morphological characteristics of soybean line soybean cultivar 0509237 listed in Table 1 to produce selected backcross progeny plants; and
- (e) repeating steps (c) and (d) one or three or more times in succession to produce selected second fourth or higher backcross progeny plants that comprise and express said nucleic acid molecule and have all of the physiological and morphological characteristics of soybean line soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

29. (CURRENTLY AMENDED) A plant produced by the method of claim 28, wherein the plant comprises and expresses the nucleic acid molecule and has all of the physiological and morphological characteristics of soybean line soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.